UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,879	01/09/2006	Masayoshi Kobayashi	Q92553	7294

23373 7590 04/14/2011

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER	
ANWAR, MOHAMMAD S	
ART UNIT	PAPER NUMBER
2463	

NOTIFICATION DATE	DELIVERY MODE
04/14/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

sughrue@sughrue.com
PPROCESSING@SUGHRUE.COM
USPTO@SUGHRUE.COM

Office Action Summary	Application No.	Applicant(s)	
	10/563,879	KOBAYASHI, MASAYOSHI	
	Examiner	Art Unit	
	MOHAMMAD ANWAR	2463	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 January 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/19/11 has been entered.

Response to Arguments

2. Applicant's arguments, see Remarks, filed 1/19/11, with respect to the rejection(s) of claim(s) under Office Action dated 8/19/10 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the newly cited references.

In response to applicant argument, In Horiguchi, a plurality of logical lines for relaying packets, and a plurality of queues for storing packets on a logical line basis (based on the priority) are provided, *(see* Horiguchi, ¶¶ 47, 50). As described in paragraph 20 of Horiguchi, "a rate controller configured to generate timing for outputtin~ each packet stored in the first queue at a predetermined rate for each logical line." Thus, a rate with which to output packets stored in queue section 103 is previously fixed for each logical line. Further, rate controller 104 in bandwidth control portion 10 controls the timing at which packets are output, such that packets are output at a rate preset for

each logical line (see Horiguchi, ¶ 50, "The rate controller 104 generates packet readout timing so that those packets treated as a guaranteed traffic can be outputted at a data rate preset for each priority queue portion 103"). Accordingly, timing control of rate controller 104 is performed such that high-priority packets stored in the queue will be preferentially output **(see newly cited reference Ha et al.)**.

In response to applicant argument, As discussed in the foregoing, in Horiguchi, an output rate is previously fixed for each logical line, and rate controller 104 outputs packets in accordance with the output rate. Because an output rate is previously fixed for each logical line, Horiguchi does not, and cannot, allocate high bandwidth to a specific logical line and circulate bandwidth among logical lines. Thus, neither efficient communication nor congestion control in the transport layer *(see e.g.,* Specification, p. 2, 11.9-26) can be realized in Horiguchi. Further, paragraph 46 of Horiguchi discloses that contents of packets are changed and the format of the packets is converted (see Horiguchi, ¶ 46, "second FWD 30 for changing contents or converting formats of data scheduled to be transferred by the bandwidth control portion 10"). There is no teaching or suggestion that a total transmission rate is allocated **(see newly cited reference Ha et al.).**

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-34 are rejected under 35 U.S.C. 103(a) as being unpatentable by Horiguchi et al. (U.S. PGPub. No. 2002/0071387) in view of Ha et al. (U.S. Patent No. 7,136,353 B2).

For claims 1 and 15, Horiguchi et al. disclose terminating, at the transport layer relay device, first transport layer connection between a first source terminal and a first destination terminal at a first transmission rate in the transport layer and a second transport layer connection between a second source terminal and a second destination terminal at a second transmission rate in the transport layer (see Figure 1, port 1 and port 2), relaying data flow said first transport layer connection to said first destination terminal as a first relay connection and data flow of said second transport layer connection to said second destination terminal as a second relay connection to respectively separate said first and second transport layer connections (see Figure 1, port 1 and port 2), wherein the first source terminal, the second source terminal, the first destination terminal and the second destination terminal are different from each other (see Figure 1, port 1 and port 2). Horiguchi et al. disclose all the subject matter but fails

to mention determining a total transmission rate of said first and second relay connections based on the first and second transmission rates; determining a first reallocated transmission rate and a second reallocated transmission rate apportioned from the total transmission; and allocating the determined first reallocated transmission rate to said first relay connection and the determined second reallocated transmission rate to said second relay connection. However, Ha et al. from a similar field of endeavor disclose determining a total transmission rate of said first and second relay connections based on the first and second transmission rates (see column 3 lines 49-50); determining a first reallocated transmission rate and a second reallocated transmission rate apportioned from the total transmission (see column 3 lines 53-57); and allocating the determined first reallocated transmission rate to said first relay connection and the determined second reallocated transmission rate to said second relay connection (see column 7 lines (see column 3 lines 57-62). Thus, it would have been obvious to one ordinary skill in the art at the time of invention was made to include Ha et al. transmission calculation and allocation scheme into Horiguchi et al. relay scheme. The method can be implemented in a relay device. The motivation of doing this is to control transmission rate for plurality of connections (see column 4 lines 22-25).

For claims 2, 3, 9, 10, 16 and 17, Horiguchi et al. disclose all the subject matter but fails to mention wherein said total transmission rate is determined in accordance with the number of transport layer connections that are being relayed and congestion conditions of a network through which the relay connections pass. However, Ha et al. from a similar field of endeavor disclose wherein said total transmission rate is

determined in accordance with the number of transport layer connections that are being relayed (see column 3 lines 49-50) and congestion conditions of a network through which the relay connections pass (see column 3 lines 50-53). Thus, it would have been obvious to one ordinary skill in the art at the time of invention was made to include Ha et al. transmission rate calculation method into Horiguchi et al. relay transmission scheme. The method can be implemented in a relay devices. The motivation of doing this is to control transmission rate for plurality of connections (see column 4 lines 22-25).

For claims 4, 11, 18 and 25, Horiguchi et al. disclose all the subject matter but fails to mention wherein said total transmission rate is determined in accordance with the number of transport layer connections that are being relayed and congestion conditions of a network through which the relay connections pass such that effective transmission rates are attained for relay connections, wherein transmission rates for traffic other than relay connections that shares bottleneck with the relay connections are allocated differently than transmission rates allocated to the relay connections. However, Ha et al. from a similar field of endeavor disclose wherein said total transmission rate is determined in accordance with the number of transport layer connections that are being relayed and congestion conditions of a network through which the relay connections pass such that effective transmission rates are attained for relay connections (see column 13 lines 30-33), wherein transmission rates for traffic other than relay connections that shares bottleneck with the relay connections are allocated differently than transmission rates allocated to the relay connections (see column 14 lines 43-61). Thus, it would have been obvious to one ordinary skill in the art

at the time of invention was made to include Ha et al. weight and priority scheme into Horiguchi et al. congestion control scheme. The method can be implemented by dynamically assigning priority to individual packets within a data stream. The motivation of doing this is to have high priority allocated greater portion of transmission rate than lower priority (see column 4 lines 12-14).

For claims 5, 12 and 19, Horiguchi et al. disclose all the subject matter but fails to mention wherein said total transmission rate is allocated transmission rates of each of said first and second relay connections depending on application information in said data flow of each of said first and second relay connections. However, Ha et al. from a similar field of endeavor disclose wherein said total transmission rate is allocated transmission rates of each of said first and second relay connections depending on application information in said data flow of each of said first and second relay connections (see column 14 lines 43-67, column 15 lines 1-6). Thus, it would have been obvious to one ordinary skill in the art at the time of invention was made to include Ha et al. transmission rate calculation method into Horiguchi et al. relay transmission scheme. The method can be implemented in a relay devices. The motivation of doing this is to control transmission rate for plurality of connections (see column 4 lines 22-25).

For claims 6, 7, 13, 14, 20 and 21, Horiguchi et al. disclose all the subject matter but fails to mention further comprising estimating, by means of measurement packets; congestion conditions of a network through which the first and second relay connections pass, wherein said congestion conditions are also used to determine said total transmission rate. However, Ha et al. from a similar field of endeavor disclose

estimating, by means of measurement packets (see column 11 lines 37-41); congestion conditions of a network through which the first and second relay connections pass, wherein said congestion conditions are also used to determine said total transmission rate (see column 3 lines 49-53). Thus, it would have been obvious to one ordinary skill in the art at the time of invention was made to include Ha et al. transmission rate calculation method into Horiguchi et al. relay transmission scheme. The method can be implemented in a relay devices. The motivation of doing this is to control transmission rate for plurality of connections (see column 4 lines 22-25).

For claims 8 and 33, Horiguchi et al. disclose first terminal-side connection termination unit that terminates first transport layer connection between a first source terminal and a first destination terminal in a transport layer (see Figure 1, port 1), a second terminal-side connection termination unit that terminates a second transport layer connection between a second source terminal and a second destination terminal in a transport layer (see Figure 1, port 2) and a first interdevice connection termination unit that terminates first transport layer connections with a first transport layer relay devices that relays transport layer data between said first terminal-side connection termination units and said first interdevice connection termination units (see Figure 1, VPN1 is terminated separate); a second interdevice connection termination unit that terminates a second transport layer connection between a second transport layer device that relays transport layer data between said second terminal-side connection termination unit and said second interdevice termination unit (see Figure 1, VPN 2 is terminated separate). Horiguchi et al. disclose all the subject matter but fails to mention

a transmission rate control unit that controls transmission rates of said first and second interdevice connection termination units, wherein the transmission rate control unit determines a total transmission rate of all interdevice connection termination units, determines a first reallocated transmission rate and a second reallocated transmission rate, the first reallocated transmission rate and the second reallocated transmission rate apportioned from said total transmission rate, allocates the determined first reallocated transmission rate to said first interdevice connection termination unit and the determined second reallocated transmission rate to said second interdevice connection termination unit and reports a transmission rate that has been allocated to said first and second interdevice connection termination units, said first interdevice connection termination unit relaying said first transport layer connection to said first destination terminal as a first relay connection based on said first reallocated total transmission rate and said second interdevice connection termination unit relaying said second transport layer connection to said second destination terminal as a second relay connection based on said second reallocated total transmission rate, and wherein the first source terminal, the second source terminal, the first destination terminal, and the second destination terminal are different from each other. However, Ha et al. from a similar field of endeavor disclose a transmission rate control unit that controls transmission rates of said first and second interdevice connection termination units, wherein the transmission rate control unit determines a total transmission rate of all interdevice connection termination units (see column 3 lines 49-50), determines a first reallocated transmission rate and a second reallocated transmission rate, the first reallocated transmission rate

and the second reallocated transmission rate apportioned from said total transmission rate (see column 3 lines 53-57), allocates the determined first reallocated transmission rate to said first interdevice connection termination unit and the determined second reallocated transmission rate to said second interdevice connection termination unit (se column 3 lines 57-61)and reports a transmission rate that has been allocated to said first and second interdevice connection termination units (see column 16 lines 23-24, advertised window size), said first interdevice connection termination unit relaying said first transport layer connection to said first destination terminal as a first relay connection based on said first reallocated total transmission rate and said second interdevice connection termination unit relaying said second transport layer connection to said second destination terminal as a second relay connection based on said second reallocated total transmission rate, and wherein the first source terminal, the second source terminal, the first destination terminal, and the second destination terminal are different from each other (see column 14 lines 43-65). Thus, it would have been obvious to one ordinary skill in the art at the time of invention was made to include Ha et al. transmission rate calculation method into Horiguchi et al. relay transmission scheme. The method can be implemented in a relay devices. The motivation of doing this is to control transmission rate for plurality of connections (see column 4 lines 22-25).

For claims 22 and 34, Horiguchi et al. disclose a plurality of terminal-side connection termination units that terminate transport layer connections between a plurality of source terminals and destination terminals in the transport layer (see Figure 1, port 1 and port 2); an interdevice connection termination unit that terminates a

plurality of transport layer connections with a plurality of transport layer relay devices that relay transport layer data between said plurality of terminal-side connection termination units and said interdevice connection termination unit (see Figure 13);

an MUX-DEMUX unit that groups transport layer data from each of said plurality of terminal-side connection termination units as a plurality of relay connections and transfers the plurality of relay connections to said interdevice Connection termination unit; wherein said MUX-DEMUX unit groups data from the plurality of terminal-side connection termination units in accordance with the reallocated transmission rates allocated by the transmission rate control unit (see Figure 13, FWD unit mux and demux). Horiguchi et al. disclose all the subject matter but fails to mention a transmission rate control unit that determines a total transmission rate of the plurality of relay connections, determines reallocated transmission rates apportioned from the total transmission rate, and allocates each the reallocated transmission rates to the plurality of relay connections, wherein said interdevice connection termination unit transmits said plurality of relay connections to said plurality of destination terminals in accordance with the reallocated transmission rates, wherein said MUX-DEMUX unit groups data from the plurality of terminal-side connection termination units in accordance with the reallocated transmission rates allocated by the transmission rate control unit, and wherein the transmission rate control unit determines the total reallocated transmission rates of said interdevice connection termination unit and reports the allocation of the reallocated transmission rates among the plurality of relay connections to said MUX-DEMUX unit. However, Ha et al. from a similar field of endeavor disclose a transmission rate control

unit that determines a total transmission rate of the plurality of relay connections (see column 13 lines 29-32), determines reallocated transmission rates apportioned from the total transmission rate, and allocates each the reallocated transmission rates to the plurality of relay connections (see column 14 lines 47-52), wherein said interdevice connection termination unit transmits said plurality of relay connections to said plurality of destination terminals in accordance with the reallocated transmission rates (see column 14 lines 43-47), , and wherein the transmission rate control unit determines the total reallocated transmission rates of said interdevice connection termination unit and reports the allocation of the reallocated transmission rates among the plurality of relay connections to said MUX-DEMUX unit (see column 16 lines 20-27). Thus, it would have been obvious to one ordinary skill in the art at the time of invention was made to include Ha et al. transmission rate calculation method into Horiguchi et al. relay transmission scheme. The method can be implemented in a relay devices. The motivation of doing this is to control transmission rate for plurality of connections (see column 4 lines 22-25).

For claims 23, 24, 27 and 28, Horiguchi et al. disclose all the subject matter but fails to mention wherein said total transmission rate is determined in accordance with the number of transport layer connections that are being relayed and congestion information of connections that are reported from the interdevice connection termination unit. However, Ha et al. from a similar field of endeavor disclose wherein said total transmission rate is determined in accordance with the number of transport layer connections that are being relayed and congestion information of connections that are

reported from the interdevice connection termination unit (see column 13 lines 30-33). Thus, it would have been obvious to one ordinary skill in the art at the time of invention was made to include Ha et al. transmission rate calculation method into Horiguchi et al. relay transmission scheme. The method can be implemented in a relay devices. The motivation of doing this is to control transmission rate for plurality of connections (see column 4 lines 22-25).

For claim 26, Horiguchi et al. an application information analysis unit for analyzing application information in transport layer data when transport layer data are transferred between each of said terminal-side connection termination links and said MUX-DEMUX unit discloses MUX-DEMUX unit (see para. 47); wherein said transmission rate control unit allocates said total transmission rate among the transmission rates of each of the plurality of relay connections and reports the allocated transmission rates to said MUX -DEMUX unit based on the application information analyzed by said application information analysis unit (see Figure 13, FWD+MUX-DEMUX).

For claim 29, Horiguchi et al. disclose wherein, when establishing a new transport layer connection between a new source terminal and a new destination terminal, said total transmission rate is determined (see para.47, bandwidth control), said total transmission rate is allocated to each relay connection (see para.47) and the allotted transmission rates are reported to a partner transport layer device in establishing said new transport layer connection (see para. 77).

For claim 32, Horiguchi et al. disclose wherein, when establishing a transport layer connection between a new source terminal and a new destination terminal, an initial transmission rate (see column 34 lines 13-17) that is reported from said transmission rate control unit is reported to the new destination terminal (see column 34 lines 17-18).

For claim 30, Horiguchi et al. disclose wherein when establishing a transport layer connection between a new source terminal and a new destination terminal, an initial transmission rate is reported to the destination from said transmission rate control unit (see para 46).

For claim 31, Horiguchi et al. disclose wherein when establishing new transport layer connection between a new source terminal and a new destination terminal, said total transmission rate is allocated and the allocated transmission rate are reported to a partner transport layer device in establishing a new transport layer protocol (see para. 49, priority queues are determined for each link and transmission rate is controlled).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MOHAMMAD ANWAR whose telephone number is (571)270-5641. The examiner can normally be reached on Monday-Thursday, 9am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derrick W. Ferris can be reached on 571-272-3123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MOHAMMAD ANWAR
Examiner
Art Unit 2463

/M. A./
Examiner, Art Unit 2463

/DERRICK FERRIS/

Supervisory Patent Examiner, Art Unit 2463